Mississippi Valley Construction Best Practices – Brenda O'Brien

Session 1

1. Was Fieldmanager developed just for Michigan or was it the standard AASHTO product?

   FieldManager was developed initially in Michigan in 1985, with a number of enhancements since then. Infotech came on board in the mid 90s to implement a multi-state solution and develop it so anyone could use it.

2. Does the contractor access FieldManager by a website?

   No, contractor access is not by website. The contractor purchases a license for FieldManager for their computer(s). We provide the data files via email. So it is not web based yet, but the next generation will be. The data file is emailed to the contractor on a bi-weekly basis when we pay estimates.

3. So he gets an updated data file every time he gets an estimate?

   Yes, or in between if he wants – if he requested a file in between I am sure some offices would accommodate that.

4. Pre-cast decking – how applicable is that to an urban setting? The deck was 2.2 times the cost to do one versus the other.

   We did not do a straight comparison, but overall considering the traffic control it evened out.

5. It was definitely minimizing impact to traffic to shut traffic down at night, and it is low volume traffic and you could use one lane and not have that much of a problem. I just wondered how applicable it would be in town where you have a lot of things happening around it?

   Texas has done a lot of multi-level interchanges. We are doing a pre-cast bent cap this year – using some federal money to do that – and we are starting in the rural areas to see how well it works. It is more expensive, but if you are in like downtown Dallas where that t-rex project was, you would figure the cost of the traffic, traffic control and the user costs. It evens itself out.

6. In reference to the pavement project that Illinois is working on (rubblizing concrete pavement), did I understand you to say that you did do some of this under traffic, or did you take all the traffic off of the road?

   We have done an interstate under traffic, a two-lane under traffic, and we have closed them down too. It is project dependent on how we handle maintenance of traffic.

7. What kind of traffic volumes were you experiencing on two-lane roads when you did construction (rubblizing concrete pavement) under traffic?

   About 2,000 ADT or less. One is a frontage road and one is a farm to market type road.

8. Bridge deck cracking – you mentioned that one of the issues the contractor had with getting the burlap down early was damaging the tining. Did you look at diamond grinding the bridge deck after it cured as a possible practice?

   Yes we have looked it – it is a little more expensive to go that way. So for cost consideration we have not done that. There is still a little bit of lag time that the contractors are hesitant to put the burlap down right away because it can stick and is messy to pick up the burlap. It gets embedded into the concrete. Ideally we would like to transverse tine because we get more consistent tining. What we have found is that as your different loads of concrete vary, you get inconsistent tining with the way we do it. So for cost considerations, we are keeping as it is for now. Long term we will probably look at doing some transverse grooving after the fact. We can get the wet burlap on sooner, and maybe we could do away with the dissipating curing compound altogether.

9. Is the intent to replace fly ash with silica fume?

   Silica fume is a replacement for cement – it is more expensive so we have not required this of our contractors. We laid out an option for the contractors if they want to use a fly ash replacement straight, a ground slag, a combination, or with silica fume we allowed certain percentages to be replaced. With the silica fume being more expensive and a little more finicky to deal with, the contractors have not elected to use it. While we have allowed them the choice, none of the contractors to date have chosen the silica fume. It will continue as an option. Our test results probably get some of the best results out of that, but it is a lot more finicky to work with. Therefore, the contractors are less apt to use – it is less forgiving.

10. What about permability?

    As far as permeability characteristics, we are getting as good or better than with the higher cement content, but with less cracking. Most contractors elect to go with either a fly ash or a combination of slag and fly ash – not just the pure slag. We find the ternary mix to be very beneficial right now.

11. Are you getting higher strengths with the silica fume?

    I don't know about the silica fume, but with our much higher cement content with a sack of extra cement we were getting a lot higher strengths. We were getting around 9,000 psi as opposed to 6,000 with this mix. But even with the lesser strength, we are still getting the equivalent permeability characteristics, which is what we are after. We designed for 4,000 so the ultra high strengths are not needed; all it is giving us is additional cracking.

Session 2

1. Is FieldManager different than SiteManager, or is it two names for the same thing?

   It is different in that it was developed independently from SiteManager, but it has a lot of the same functionalities.

2. Rubblizing concrete pavements – on one of the charts there is a traffic factor on the side from 1 to 100. What does that represent as far as ADT? What would be the 100?

   That traffic factor is millions of esals, which we use to design our pavement. To give you a rough idea, a moderate volume interstate will accumulate about 1.5 to 2 million esals per year on it. That is about 12,000 ADT, 30-40 percent trucks.

3. Open graded subbase works pretty well – that may be the key to the extended life of the rubbilization. Do you see more open graded subbases vs the uniform graded?

   As far as this being an open graded subbase, it does drain. I would not put this in the same class as those open graded bases constructed as such. With rubbilization basically have a 9 inch blocky type very interlock material on the bottom. As you get near the surface it is more open directly below the overlay. Whereas if you were building an open graded section with a gap graded material, you would have that open graded right on the subgrade or right on whatever base material you had down below. So it is different, it does drain quite well though.

4. Do you transverse tine through plastic concrete (bridge deck cracking).

   We use transverse tining. However, we are looking at doing a transverse grooving and sawing it in afterwards. Right now we just do the transverse. We have done a few pilot projects using diamond grinding (longitudinal grooving on bridges).

5. So is there any research or a study on doing it after the concrete's hardened to reduce the cracking (bridge deck cracking)?

   You would gain some benefit because you could put your wet burlap on immediately. That would negate the need for the dissipating curing compound, which is one of the reasons we are looking at. There is a little bit of a cost factor involved in it right now, so we have not moved forward with that. One thing you would gain with doing it after the fact is consistent tining. When your concrete varies throughout your pour, you get some inconsistent tining. You get some where it melts back in and some where it crumbs up a little bit. You would get some consistent texturing, which is why we are looking at possibly going to that in the future.

6. So right now it is more of just a cost issue?

   Yes.